



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,815	09/28/2001	Heiko Maas	0050/50721	5442

26474 7590 06/12/2003

KEIL & WEINKAUF  
1350 CONNECTICUT AVENUE, N.W.  
WASHINGTON, DC 20036

EXAMINER
----------

LU, C CAIXIA

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 06/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/937,815

Applicant(s)

MAAS ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1713

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 1, regarding the definition of i), component i) is not explicitly cited as a combination of five-member aromatic N-heterocycle and alkyl aluminum. However, in view of the Specification, component i) is the combination of five-member aromatic N-heterocycle and alkyl aluminum. The examiner suggests the applicants to amend the claim to expressly limit component i) as the combination of five-member aromatic N-heterocycle and alkyl aluminum.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by The report at the 215<sup>th</sup> ACS National Meeting, March 29-April 2, 1998 (herein after referred as "ACS Report").

The instant amended claims are directed to a catalyst composition comprising a multidentate triazine chromium complex and an activator such as aluminoxane. The instant claims are no longer limited to a catalyst for oligomerization, thus, the scope of

Art Unit: 1713

the claims is broader than the claims as previously filed on September 28, 2001. Due to broadening of the scope of the claims, the subject matter of instant claims is no longer allowable for the following reasons.

In lines 21-27 of page 2 of the Specification, through applicants self admission, ACS Report teaches a trimerization of ethylene to 1-hexene using an N,N,N-trioctyltriazacyclohexane-chromium complex and methylaluminoxane catalyst composition. The teaching of the ACS Report encompasses the instant claims.

***Claim Rejections - 35 USC § 103***

4. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tani et al. (JP 10-231317) in view of the ACS Report.

Tani teaches a catalyst comprising a nitrogen-tridentate chromium complex and an activator such as borates and aluminoxane (page 4, paragraph [0003]; pages 5-6, paragraphs, [0006]-[0009]). It is noted that Tani prefers the borate cocatalyst to aluminoxane since the removal of aluminoxane from the polymer product can be difficult. However, when the removal of the aluminoxane is not a problem, obviously, aluminoxane can be used as the activator. As indicated in applicants' Specification, the ACS Report teaches aluminoxane as an activator for N,N,N-trioctyltriazacyclohexane-chromium complex in the process of oligomerization.

While Tani does not expressly exemplify the two N,N,N-trioctyltriazacyclohexane-chromium complex species of the instant Claims 5 and 6, Tani does teach the R of formula (I) can be any C<sub>1</sub>-C<sub>20</sub> alkyl groups. One would have readily envisioned those C<sub>8-10</sub>-alkyl R group to be those of instant Claims 5 and 6.

✓ Art Unit: 1713

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Tani's teaching to prepare a catalyst composition comprising various N,N,N-trioctyltriazacyclohexane-chromium complex and aluminoxane since such is within the generic teaching of the cited prior art and in the absence of any showing criticality and unexpected results.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (703) 306-3434. The examiner can normally be reached on 9:00 a.m. to 3:30 p.m..

Art Unit: 1713

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1193.

  
Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713

CL  
June 11, 2003